

## PATENT ABSTRACTS OF JAPAN

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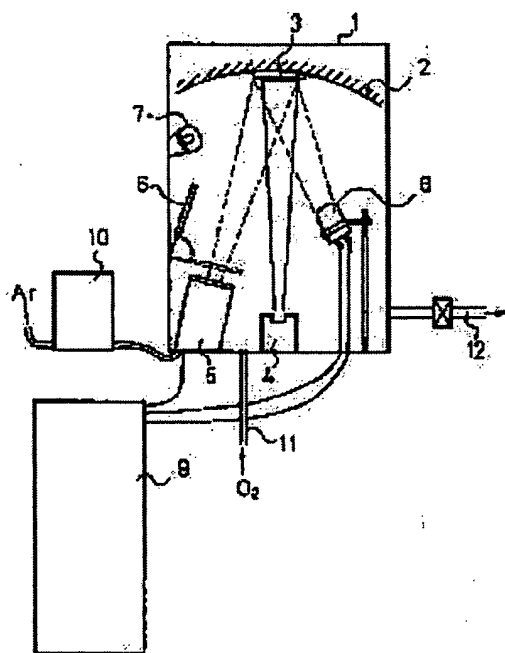
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## (54) MANUFACTURE OF SEMICONDUCTOR DEVICE

## (57)Abstract:

**PURPOSE:** To form an inter layer insulating film adhering closely to a backing resin film by forming a flattening resin layer on a substratum wiring layer with organic silicon polymer used and also forming a layer insulating layer on the resin layer by the vacuum evaporation of ion beam assist to flatten a difference in level which is caused by a multilayer inter connection process.

**CONSTITUTION:** The methanol solution of siniphenylene resin powder is applied by a spin-coat method to a silicon substrate 3 having the aluminum wiring of the first layer applied to. The substrate 3 provided with a resin layer is fixed in a dome 2 located within vacuum tank 1, and Ar ion beams from an ion gun 5 are applied to the substrate 3 to perform the bombardment of the surface of the substrate for clean-up. Next, light from a halogen lamp 7 is applied to the substrate 3, and after the temperature of the surface of the substrate is set at 300°C, oxygen gas is introduced into the vacuum tank 1. Also, Ar gas is introduced into a gas control unit 10 and SiO<sub>2</sub> is deposited on the substrate 3 from an evaporation source 4 which is heated by an electron gun with the Ar ion beams being applied to the substrate 3.



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